

**Department of Water Resources Quarterly Status Report
Central Valley Flood Protection Board Resolution 2012-25, 11(y)
Amendments and Adoption of the 2012 Central Valley Flood Protection Plan**

November 2013 Update

- 11(e) DWR anticipates completing a draft Central Valley Flood System Conservation Strategy not later than 2014, expanding on the Conservation Framework attached to the adopted CVFPP, to describe long-term, system-wide conservation objectives and covered actions associated with the flood management system.**

As part of the Strategy's development process, staffs from both FESSRO and CVFPO have been meeting frequently to ensure a high-level of coordination between the Strategy, the Basin-Wide Feasibility Studies, and Regional Flood Management Plans (RFMP). On Oct 23-24 FESSRO and CVFPO hosted a joint workshop related to flood and ecosystem planning objectives, tools, and data. It was attended by about 100 people, representing a variety of local, state, and federal agencies, other private organizations of environmental and agricultural interests, and participants in the Regional Flood Management Planning groups. DWR staff from CVFPO and FESSRO, as well as individuals involved in RFMP groups informed participants about how objective topics from the May 2012 Workshop were modified, described the data and tools being used for the Conservation Strategy and the BWFS work, and how these data and tools are being used in RFMP work already. Participants were very interested to learn about this information and how they could use it for their flood-related planning work. They also provided many constructive comments on ways to improve these data and tools.

DWR has been working internally and with resource agencies on initial drafts of the Conservation Strategy. Staff have also been, engaging, and will continue to engage, other interested groups, including the Regional Flood Management Planning (RFMP) Coordinating Committee and RFMPs, to get initial feedback on key elements of this developing document. These elements include integrated flood/ecosystem measurable objectives, regional permitting, revisions to levee vegetation management approach, approaches for agricultural land stewardship, improvements to fish passage, and targeted species conservation assessment.

- 11(f) Pursuant to CWC § 9620(c), DWR will prepare a recommended schedule and funding plan in 2013 to implement the recommendations of the adopted CVFPP, and DWR, by December 31, 2012, will brief the Board as to how it intends to collaborate with local, State and federal agencies on the development of the recommended schedule and funding plan.**

DWR is providing funding through several programs to implement urban, small community, and rural levee repairs and improvements consistent with the adopted CVFPP. The Early Implementation Program (EIP) continues to implement urban flood improvements. The Small Erosion Repair Program (SERP) was established to address small levee repairs on levees maintained by DWR within the Sacramento River Flood Control Project (SRFCP) area. Phase 1, the initial 5-year effort, is currently underway and will address approximately 306 miles of state maintained levees. Guidelines are drafted for the Urban Flood Risk Reduction Program (to replace the EIP Program) with a program goal to reduce urban flood risks. Guidelines are being prepared for the Small Community Flood Risk Reduction Program to achieve 100-year flood protection for small communities through both structural and non-structural means, the Flood Risk Reduction Evaluation and Study Program to evaluate flood risk reduction alternatives by expediting federal studies and performing State and local studies, and the Flood System Repair Project, which will address deficiencies in SPFC facilities. The final Flood System Repair Project guidelines have been

approved and will shortly be posted. Negotiations for executing funding agreements with Local Maintaining Agencies to perform repairs are expected to commence in August.

11(g) DWR intends to provide funding, to be cost shared by local agencies, to implement urban, small community, and rural levee repairs and improvements consistent with the adopted CVFPP.

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11(j) DWR, in coordination with the Board, USACE, local agencies and the public will initiate State-led basin-wide feasibility studies for the Sacramento and San Joaquin River Basins (in time to inform the 2017 CVFPP update) to evaluate and refine the conceptual system improvement elements described in the adopted CVFPP, including bypass expansions and new bypasses, and evaluate appropriate regional plan elements at the system-wide level. These are likely to include the formation of one or more working groups to identify potential implementation challenges and solutions, potential effects on local and regional land uses and economies, and specific multi-benefit objectives for system elements.

Two basin-wide feasibility studies, the Sacramento River Basin Feasibility Study and the San Joaquin River Basin Feasibility Study, were initiated in September 2012. DWR has completed its first workshop on objectives and its second workshop on technical tools and revised objectives. Work on both studies is progressing, with the current focus on problem definition and plan formulation. The communication and engagement for basin-wide feasibility studies will leverage existing established venues and opportunities, including the Board's Coordinating Committee, venues established by RFMP efforts, Water Plan and other processes. Work groups and other venues will be established as necessary, in collaboration with the Board.

11(l) In conducting post-adoption implementation activities associated with the adopted CVFPP, DWR will work with the Board on other ongoing projects and programs in the Central Valley to identify mutual objectives, complementary project elements, and improve the efficiency of outreach and engagement with stakeholders and the public.

DWR meets regularly with the Board, in a variety of forums, to coordinate implementation of the CVFPP. DWR updates the Board at the regularly scheduled monthly informational public Board meeting. DWR participates in a monthly Coordinating Committee and also in the Coordinating Committee Steering Committee. In addition, an executive-level meeting between the Board's President and DWR's Executive Management and respective staff occurs on a monthly basis. The Board has also received project

specific briefings when requested or as necessary to inform the Board of significant issues, funding requests, or change in project status. CVFPO has regular discussions with Board staff and Board members for continuous coordination and for addressing specific concerns. Where appropriate, or upon request, DWR has included Board staff and Board member(s) in meetings and other engagements.

11(n) DWR will continue to make investments in new data, analysis tools, and system-wide benefit policies to support refinement of the physical elements of the adopted CVFPP, and assess the feasibility of project-specific implementation actions and local planning efforts.

To support implementation of the State System-wide Investment Approach detailed in the CVFPP, DWR continues investing in new data, tools, and system-wide policies, as discussed below:

- A Library of Models has been developed to provide other agencies with access to all FloodSAFE models to reduce duplication of effort and ensure the most current models are available for use and analysis.
- Flood Forecasting is always being enhanced by expanding a variety of hydro-meteorological monitoring efforts that also support improved reservoir operations and further understanding of climate and climate change; all as funding and staff time allow.
- Inspection and documentation of the State-Federal Flood Control System is ongoing and updated annually.
- The annual inspection of the levees, channels, and structures of the SPFC has been streamlined and modernized with geo-referenced data and maps and by improved coordination with local maintaining agencies.
- Forecast-Coordinated Operations to reduce peak downstream flood flows is ongoing and is expanding from the Yuba-Feather Basin to flood control reservoirs in the San Joaquin Valley.
- Improving data exchange is an ongoing, continuous process. The development of the FERIX (Flood Emergency Response Information Exchange) system to facilitate exchange of information among flood agencies, local levee maintaining agencies, reservoir operators, etc. is complete and the system is available to flood management partners.
- Data acquisition under the Central Valley Topography Acquisition Project is complete with the exception of a small area in the Delta where a datum error has been identified, which is anticipated to be corrected by April 2013. Data obtained includes Digital Aerial Photography (9,000 square miles), Initial Post-Processed LiDAR (7,800 square miles), Final Post-Processed LiDAR (5,700 square miles), and bathymetric and field surveys (5,500 cross sections). DWR is releasing approved DAP and Final Post-Processed LiDAR to local, state and federal agencies.
- The Central Valley Hydrology Study, a partnership study with USACE, to update stream flow frequencies and magnitudes of the Sacramento and San Joaquin rivers and major tributaries is nearly complete.
- The Central Valley Hydraulic Evaluation Project to update hydraulic models for Central Valley rivers and streams to support local, regional, and basin-wide flood planning efforts, and new emergency response applications including enhanced river stage forecasting is wrapping up with the end of the calendar year.
- Geotechnical assessment of the Central Valley levees is ongoing and program status is updated monthly in the DWR report to the Board.
- Floodplain mapping under the Central Valley Floodplain Delineation Project is completed. The project provided Urban 200-year SPFC informational floodplain maps for the urban communities of Chico, Yuba City, Marysville, Davis, Woodland, West Sacramento, Sacramento, Stockton, Lathrop, and Merced. Some additional follow-up work is lingering.

- Development of Levee Flood Protection Zones (LFPZ) Maps, to provide an initial level of awareness to property owners protected by SPFC levees, is complete for 2,205 square miles of land in 17 counties in the Central Valley protected by SPFC levees.
- Awareness Floodplain Mapping, 100-year advisory (non-regulatory) flood event maps for areas in the state expected to have some development in the next 25 years, is complete with mapping of 26,500 river miles.
- The Building Standards Code updates for areas protected by SPFC facilities where flood levels are anticipated to exceed 3 feet for a 200-year flood event were voluntarily.
- Community Assistance Visits are ongoing with more than 260 community assistance visits and 128 local floodplain management training workshops conducted to date.
- Flood Risk annual notification is ongoing with written flood risk notices mailed annually to property owners of more than 350,000 distinct properties in 2010, 2011, and 2012. This notification is unique in that it utilizes both GIS information about local flood risks and county assessor parcel databases to produce notices that are targeted to and provide specific local flood risk information for each parcel.
- DWR is **working to develop robust benefit assessment procedures that can be applied to a broad range of integrated water management projects, including** multi-benefit flood management improvement projects.
- **DWR, in partnership with the Department of Fish and Wildlife and the US Fish and Wildlife Service, is refining an existing data management system to track gains and losses of habitat within the flood system over time.**
- **The Floodplain Restoration Opportunity Area analysis, initially described in the 2012 Conservation Framework, has been refined to incorporate other factors that add or detract from an area's potential restoration suitability.**
- **DWR has completed a more detailed assessment of all major fish passage barriers within the flood system, focusing on strategic needs and opportunities along individual river reaches.**
- **The first fine-scale vegetation data set for the entire flood system has been completed. This provides higher resolution and more information about the distribution and condition of natural habitat and other land cover within the flood system.**

11(o) DWR will conduct additional analyses to evaluate the effects of climate change and the effectiveness of various flood system improvements proposed in the SSIA to accommodate future changes in hydrology and sea level rise, for use in the basin-wide feasibility studies.

DWR is currently working with climate change experts to advance the knowledge of atmospheric rivers, a phenomenon correlates well with historical California flooding, with findings scheduled to be available in late 2014. The new information will help to bridge the gaps of current understanding in atmospheric river intensity changes under climate change conditions. In addition, DWR expanded the promising new methodology developed in collaboration with climate change experts for the 2012 CVFPP to perform initial exploratory studies on the physical vulnerability of the Sacramento River flood management system. Additional refinements on the vulnerability analysis are scheduled to assist in formulating the future conditions for the BWFS; the outcomes of the vulnerability could also provide additional **information** for regional planning purposes. DWR has provided a briefing in July 2013 on climate change study development progress. In addition, DWR has commissioned the National Research Council to review the sea levee rise projection; the results became available in June 2012 and documented in the report entitled "Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future." Based on the sea level rise information, DWR has revised the downstream boundary conditions that would be used for flood system hydraulic studies.

- 11(p) The proposed CVFPP includes the Folsom Dam Joint Federal Project, the Folsom Dam Water Control Manual Update Project, the Folsom Dam Raise Project, the Yuba-Feather Rivers Joint Project for Forecast Coordinated Operations (FCO), and FCO for other reservoirs. These projects will have the effect of increasing and / or improving the use of the reservoir storage space for flood management. In addition to these projects, DWR will: (1) consider reservoir reoperations, expansions or modifications, including those proposed by local or regional entities; and (2) continue to consider flood management as an objective of its ongoing multi-benefit surface storage investigations and system-wide reoperation studies. Should these related DWR efforts identify flood management as a component of a feasible reservoir storage project, such project may be proposed for implementation under the adopted CVFPP and / or may be reflected in future updates to the adopted CVFPP.**

DWR is actively collaborating with USACE and other local flood management agencies in CVFPB/USACE cost shared flood control projects in the Central Valley that will have the effect of increasing and / or improving the use of the reservoir storage space for flood management. The current active construction project includes the Folsom Dam Joint Federal Project. The Folsom Dam Raise Project is on the near horizon and DWR is entering the initial negotiation with USACE and SAFCA for the Project Partnering Agreement on this project. DWR is actively participating in the update of the Folsom Dam Water Control Manual in coordination with the USACE and National Weather Service. DWR is analyzing and developing operational parameters to incorporate forecasts and upstream conditions. Public outreach and collaboration is ongoing under the direction of the USACE. Ongoing enhancement of the Yuba-Feather Forecast-Coordinated Operations is ongoing as is development of the San Joaquin Forecast-Coordinated Operations (see 11(n) above). Flood management is currently, and will continue to be, included as an objective in multi-benefit surface storage investigations and system-wide reoperation studies.

- 11(q) DWR will continue to provide guidance, criteria, data, analyses and technical support to assist cities and counties in making findings related to the urban level of flood protection and related land use planning requirements that come into effect upon adoption of the CVFPP to assist them to meet their statutory deadlines. The Board encourages DWR to provide preliminary 100- and 200-year floodplain mapping of areas protected by SPFC facilities to cities and counties by July 1, 2013 to allow cities and counties to meet their statutory deadlines.**

DWR has completed the Urban Levee Design Criteria (ULDC) in May 2012 and a draft Urban Level of Flood Protection (ULOP) Criteria in April 2012. ULDC is engineering criteria that are incorporated by reference in the ULOP Criteria where levees and floodwalls are used for providing urban level of flood protection (200-year level of protection). Subsequent Senate Bill 1278 and Assembly Bill 1965 of 2012 amend the original Senate Bill 5 of 2007 to clarify certain aspects of the 2007 legislation, and to amend some of the milestone dates and time frames included in the original legislation. In addition, SB 1278 requires DWR to provide information maps for the 200-year floodplain in urban areas from the Sacramento and San Joaquin river systems due to the failure of State Plan of Flood Control facilities by June July 2, 2013. DWR has completed the draft information maps in June 2013 and made available to 10 urban areas in the Central Valley. DWR is conducting additional coordination with cities and counties on map review and potential applications.

In response to the legislation amendments and associated changes, DWR reinitiated a work group process to refine the Urban Level of Flood Protection Criteria. The Urban Level of Flood Protection Criteria included participants from cities and counties, planning professionals, floodplain managers,

environmental interests, and Board members and staff. The criteria refinements were completed in October 2013. As a separate effort, DWR also initiated efforts to develop model languages that could provide references for cities and counties when updating their General Plan per legislation requirements.

11(r) Studies and analyses that result from implementation of the adopted CVFPP will be included in the 2017 update of the CVFPP and will be shared with the USACE to be considered in its Central Valley Integrated Flood Management Study scheduled for release at the same time, consistent with the State's goal to maximize federal and local cost sharing.

DWR worked closely with USACE to re-scope the Central Valley Integrated Flood Management Study (CVIFMS) consistent with USACE planning modernization guidance; a revised Feasibility Cost Share Agreement for CVIFMS was prepared and approved by the Board in August 2013. The revised FCSA for CVIFMS encompasses a 3-year, \$5 million watershed study focused on the Sacramento Basin (a briefing was made to the Board at the 7/12/2013 meeting). DWR and USACE staffs continue to coordinate planning efforts, including ongoing federal cost share feasibility studies. DWR and USACE have partnered in the development of the Central Valley Hydrology Study, a comprehensive assessment of stream flow frequencies and magnitudes in the Sacramento and San Joaquin river basins. The goal of the study is to estimate peak flows and hydrographs for various probabilities to describe flood hazards throughout the Central Valley.

11(s) DWR will sponsor regional flood management planning efforts which will develop regional plans that present stakeholder perspectives of flood management priorities for each region, the results of which will be coordinated between regions and integrated into or consistent with the basin-wide plans. Regional planning should create a role for all interested stakeholders including representatives from agricultural, city and county, conservation, environmental, landowner, and water supply interests as well as the flood control agencies and organizations.

Regional Flood Management Planning local lead agencies have initiated their planning process and are actively engaging with local stakeholders and the State-led Basin Wide Feasibility Studies and Conservation Strategy. Coordination and engagement to date has been through informal small meetings, public outreach meetings, and active attendance at the Board's Coordinating Committee. Integration of the regional and system-wide planning efforts has been initiated through the development of a common Problem Summary Statement, where collaboration and information sharing have served as the vehicle for integration. More collaborative efforts are planned for each of the major planning process steps. DWR has met individually with each RFMP to coordinate development of the BWFS with the RFMPs, and will continue to meet periodically as efforts progress.

Environmental staff has been assigned to work closely with RFMP groups and they have been actively and regularly attending RFMP meetings. They are sharing information about the Conservation Strategy, providing environmental planning information for RFMP use, and getting regional input useful for system-wide conservation planning.

11(y) For those deliverables and processes set forth in items (a) through (x) above, it is understood that DWR shall provide quarterly reports to the Board regarding schedules and progress.

This report provides an update on information regarding schedules and progress related to SSIA implementation and is a summary of information presented in DWR's monthly reports to the Board and in

project specific briefings made to the Board. In the future, this report will be updated monthly and appended to DWR's monthly report to the Board.